National Institute of Environmental Health Sciences

# Groundwater resources in Brazil: A review of possible impacts caused by climate change

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**Abstract:**

Groundwater has a strategic role in times of climate change mainly because aquifers can provide water for long periods, even during very long and severe drought. The reduction and/or changes on the precipitation pattern can diminish the recharge mainly in unconfined aquifer, causing available groundwater restriction. The expected impact of long-term climate changes on the Brazilian aquifers for 2050 will lead to a severe reduction in 70% of recharge in the Northeast region aquifers (comparing to 2010 values), varying from 30% to 70% in the North region. Data referring to the South and Southeast regions are more favorable, with an increase in the relative recharge values from 30% to 100%. Another expected impact is the increase in demand and the decrease in the surface water availability that will make the population turn to aquifers as its main source of water for public or private uses in many regions of the country. Thus, an integrated use of surface and groundwater must therefore be considered in the water use planning. The solution of water scarcity is based on three factors: society growth awareness, better knowledge on the characteristics of hydraulic and chemical aquifers and effective management actions.

## Resource Description

**Exposure :**

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Extreme Weather Event, Food/Water Security, Temperature

**Extreme Weather Event:** Drought

**Temperature:** Fluctuations

**Geographic Feature:**

resource focuses on specific type of geography

Rural, Urban

**Geographic Location:**

resource focuses on specific location

Non-United States

**Non-United States:** Central/South America

**Health Impact:** ☑

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

**Intervention:** ☑

strategy to prepare for or reduce the impact of climate change on health

A focus of content

**Mitigation/Adaptation:** ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

**Model/Methodology:** ☑

type of model used or methodology development is a focus of resource

Outcome Change Prediction

**Resource Type:** ☑

format or standard characteristic of resource

Review

**Timescale:** ☑

time period studied

Medium-Term (10-50 years)

**Vulnerability/Impact Assessment:** ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

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